CAFE Model Versions



2001-2002

- · Inception and early development
- Application to all manufacturers

2003

· Accounting for redesign cadence

2004-2006

- · Integration of compliance, effects, and benefit-cost methods
- Accounting for shared engines and transmissions
- Represention of attribute-based light truck standards
- Application of social cost of carbon (SCC)
- Maximization of estimated net benefits
- Probabilistic uncertainty analysis (Monte Carlo method)

2007-2009

- · Attribute-based passenger car standards
- . "Synergy" factors to adjust mpg estimates for technology pairings

- FFV credits
- Accounting for manufacturers' multiyear product planning

2010

- Initial use of full vehicle simulations
- · Accounting for BEV and PHEV charging
- Applying technology-specific estimates of changes in consumer value

2011-2012

- Estimating generation and use of CAFE credits
 Estimating potential for market-driven fuel economy increases
- · Estimating changes in highway fatalities due to changes in vehicle mass

- · Wide application of full vehicle simulation
- · Accounting for shared vehicle platforms
- 2013-2016 Attribute-based standards for heavy-duty (class 2b and 3) pickups and vans

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- Simulation of compliance with attribute-based CO2 standards
- Refinements to compliance credit calculations
- · Estimating impacts on new vehicle sales and used vehicle retirement
- Estimating changes in annual mileage accumulation (VMT)
- Estimating employment impacts
- Estimating health impacts of criteria polluant emissions

2021

2017-2020

- Inclusion of 400- and 500-mile BEVs, and HCR engines with cylinder deactivation
- Accounting for both CAFE and CO2 standards jointly (rather than only separately)
- Accounting for ZEV mandates applicable in California and the "Section 177" states
- Accounting for California "Framework" agreement with specific OEMs
- · Estimating impacts and monetized damages of highway vehicle crashes that do not result in fatalities